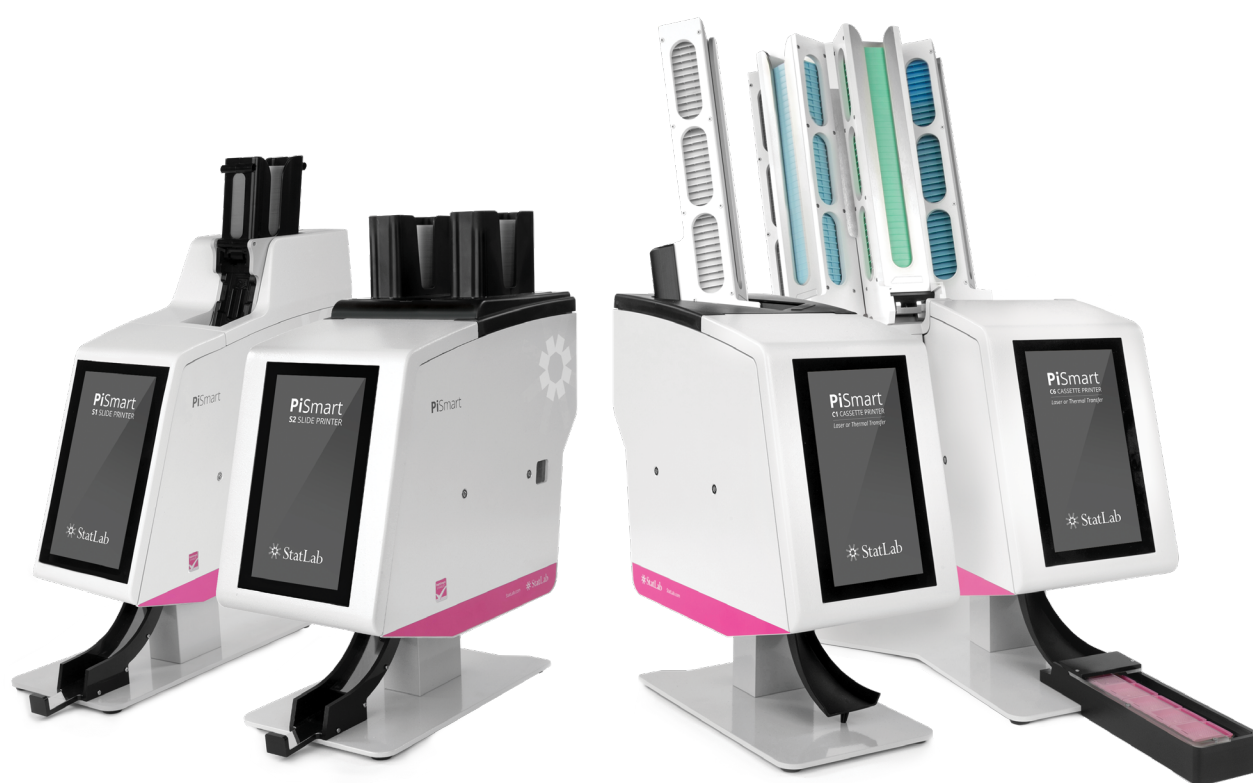


PiSmart Windows Drivers and Interface Guide





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Introduction

The PiSmart S1 is a network-enabled slide printer designed for seamless integration into laboratory workflows. This guide provides detailed instructions for setup, configuration, user management, internal label design, and general operation of the slide printer.

How to Use This Manual

Use the Table of Contents to navigate to relevant sections. Follow the numbered steps for procedures and look for callouts like:

 **Warning:** Indicates actions that may result in loss of data.

 **Tip:** Helpful suggestions for best practices.

 **Important:** Specific information is required

Interface to LIS and other Systems

The Pyramid Innovation printers include on-board software which can design and print a label design onto slides and cassettes. The printers can be interfaced to LIS and other software systems by accepting different types of files. The most common methods, text and image file printer can be sent to the printer via a Windows Printer. The Windows Printer can be installed and can receive any of the common file types. The printer automatically recognizes and receives the file types with no configuration on the printer.

Windows Printer Setup

The Pyramid Innovation printers can be set up to print labels that are designed and created by label design programs or LIS systems. These labels need to be designed and sent to the printer as a bitmap image file. The process to print these labels is much like printing from a computer to a desktop printer using a Windows® driver to manage the queue and send the images to the printer. The connection from the PC or Server to the printer can be either a USB or Ethernet connection and can be set up and configured automatically using the Pyramid Innovation Windows Printer Drivers. The printer hardware is digitally signed and compatible with Microsoft Windows® operating systems Versions: Windows 7, Windows 8, Windows 10 and Windows 11 including 22H2 patch for both 32- and 64-bit operating systems. The connectivity method used has no impact on operation or function, all printing operations can be performed using either USB or Ethernet connection.

Software Requirements:

Must have the following installed on the PC:

- C++
- CDM21228_Setup

Connecting the Printer

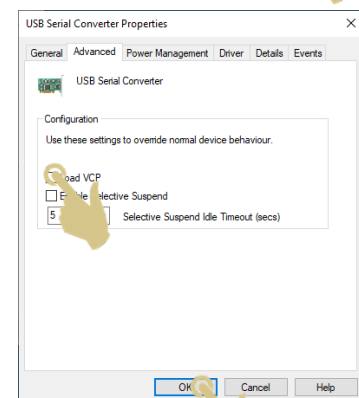
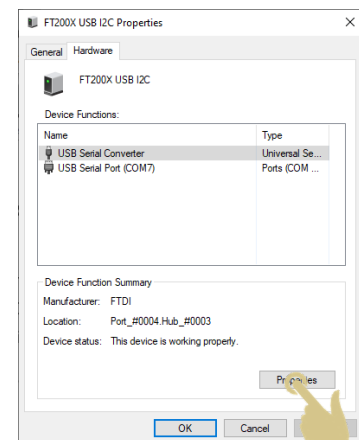
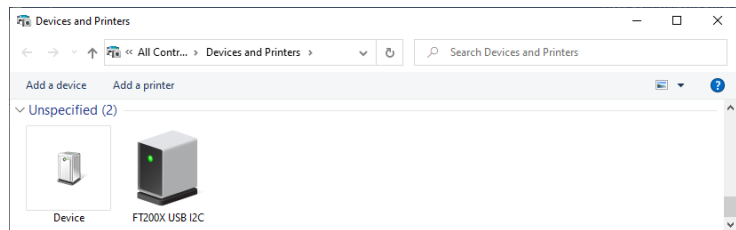
Before attempting to install the printer driver, the printer should be connected using an Ethernet or USB Cable.

USB Connection

- Connect a USB printer cable to the back of the printer
- Connect the end of the USB cable to the PC
- Open the device manager
- You should see a device labeled FT200X USB I2C – if you do not see this device, you may need to install the USB drivers.

Tip: This driver can be found on the USB thumb drive delivered with the printer. The installer is labeled CDM21228_Setup.exe. Once this tool is run, power cycle the printer and PC, then look for the device again.

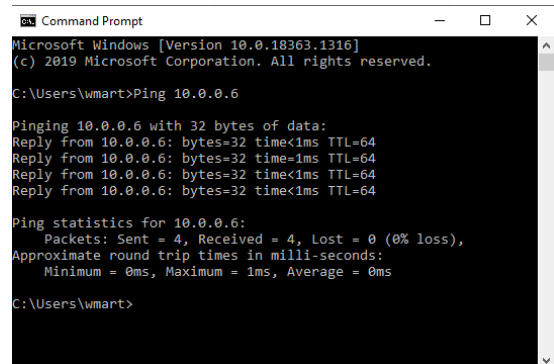
- Right-Click on the device FT200X USB I2C and select Properties
- Select the Hardware tab. If you see a Com Port listed, not the com port number.
- If you do not see a com port listed, select Properties
- Select the Advanced Tab, click Load VCP and press OK
- Click Apply, OK and restart the PC and Printer.
- Check again for the com port and note the number – in this example, the com port is COM7



Ethernet Connection

- Connect an Ethernet cable to the network
- Set up the printer Network Settings – a Static IP Address is recommended.
- Communication port should be set to 9100
- The printer also uses port 21 as part of initializing the printer connection.
- Ping the printer from a PC to ensure the connection is working.

💡 **Tip:** Some systems set the port to 3001 for the ethernet connection. To determine which port number is set, in printer properties, select configure port, then check the port number. This should be set the same as the port setting in the printer.



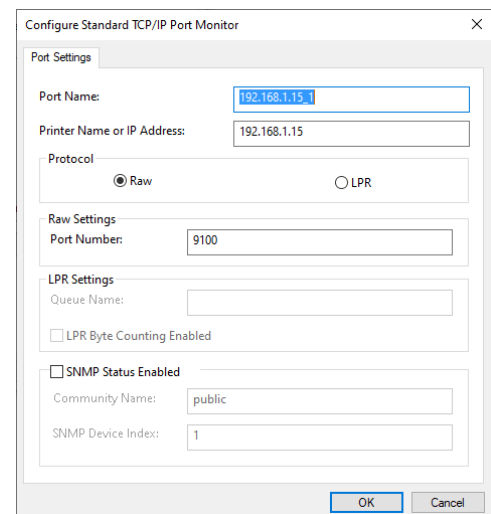
```
Microsoft Windows [Version 10.0.18363.1316]
(c) 2019 Microsoft Corporation. All rights reserved.

C:\Users\wmart>Ping 10.0.0.6

Pinging 10.0.0.6 with 32 bytes of data:
Reply from 10.0.0.6: bytes=32 time<1ms TTL=64
Reply from 10.0.0.6: bytes=32 time<1ms TTL=64
Reply from 10.0.0.6: bytes=32 time<1ms TTL=64
Reply from 10.0.0.6: bytes=32 time<1ms TTL=64

Ping statistics for 10.0.0.6:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 1ms, Average = 0ms

C:\Users\wmart>
```

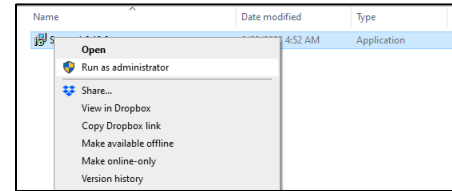


The dialog box is titled "Configure Standard TCP/IP Port Monitor". It has a "Port Settings" tab. The "Port Name" field contains "192.168.1.15". The "Printer Name or IP Address" field also contains "192.168.1.15". Under the "Protocol" section, the "Raw" radio button is selected. In the "Raw Settings" section, the "Port Number" field contains "9100". The "LPR Settings" section has an empty "Queue Name" field and an unchecked "LPR Byte Counting Enabled" checkbox. The "SNMP Status Enabled" checkbox is also unchecked. Below it, the "Community Name" field contains "public" and the "SNMP Device Index" field contains "1". At the bottom right are "OK" and "Cancel" buttons.

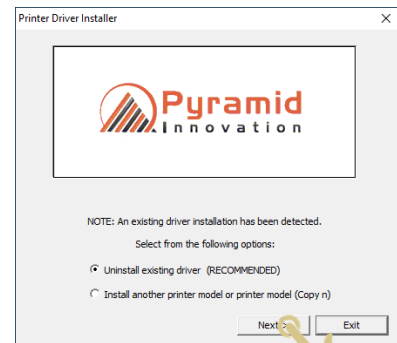
Adding the Windows Printer

Install a Windows printer using the Setup file

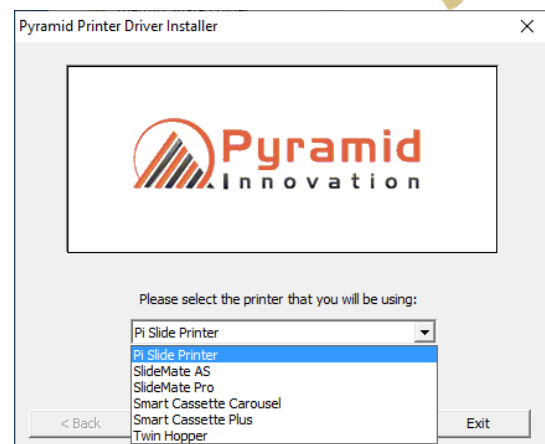
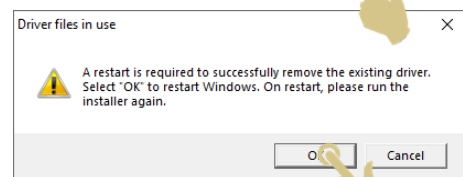
- Copy installation file to a local directory on the PC.
- Right click on the Setup file and select Run as administrator.



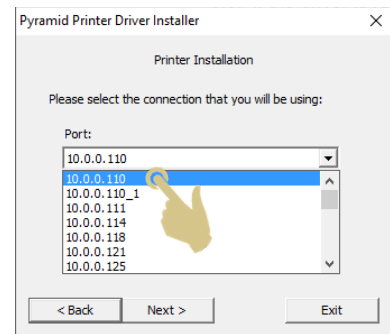
- Click YES to allow the program to make changes to the PC
- Select the recommended action and press Next.



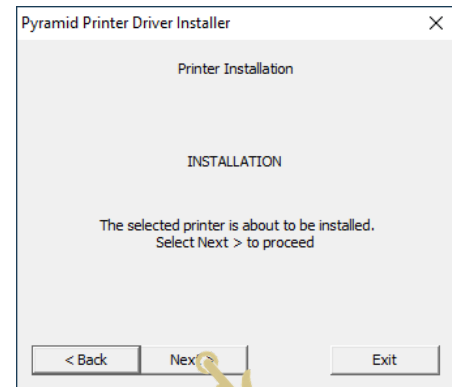
- If the driver is replacing a currently installed driver, a power cycle may be required. This will be prompted.
- Start the installation again, a printer selection menu will appear. Select the appropriate printer.



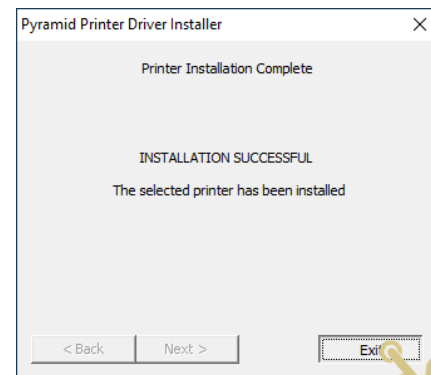
- Select the correct Connection



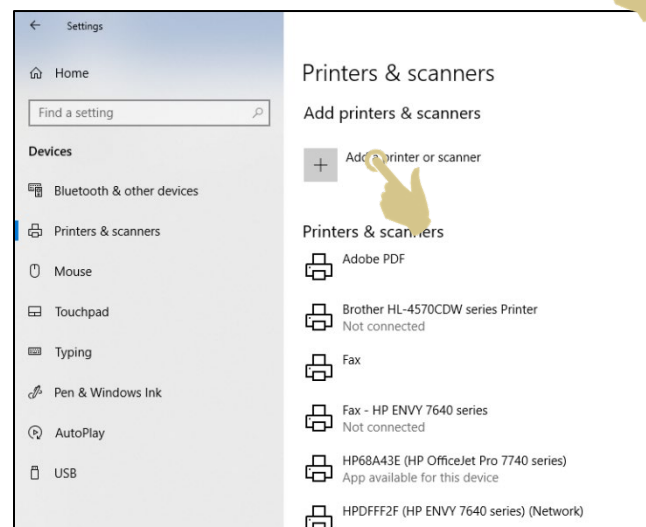
- Press Next



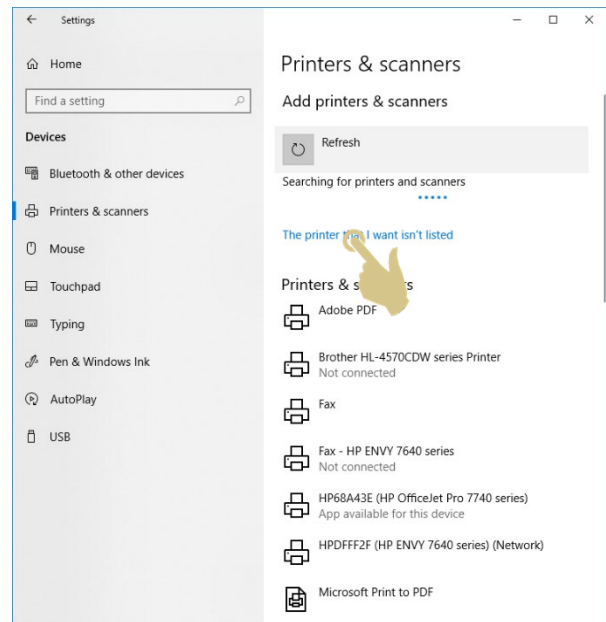
- Installation is complete, press Exit



- USING THE ADD A PRINTER FEATURE
- From the Devices and Printers, press add a printer



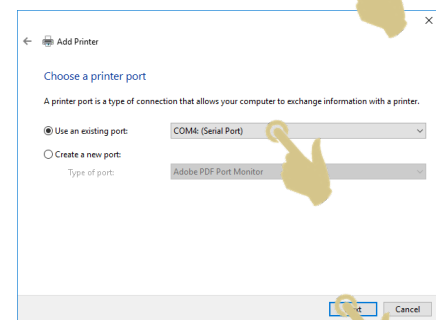
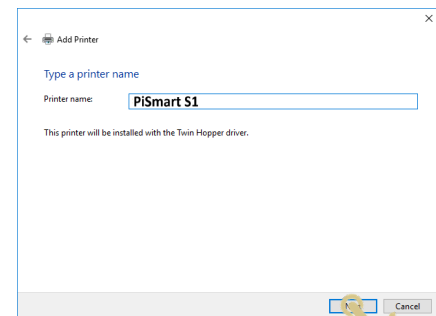
- If the printer is not listed, press the button, “The printer that I want isn’t listed”



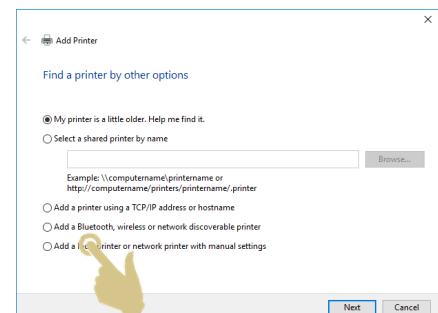
- Select Add a local printer or network printer with manual settings
- Select the connection to which the printer is connected (in this example it is Com4)

If you are using Ethernet, you may need to create a new port if the printer IP address is not shown.

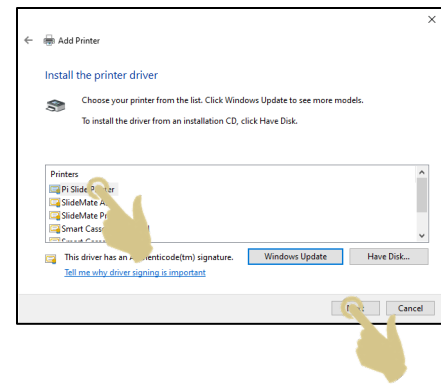
- Press NEXT



- Once the search is complete, you will see a list of printer models.
- Select the correct printer then press Next



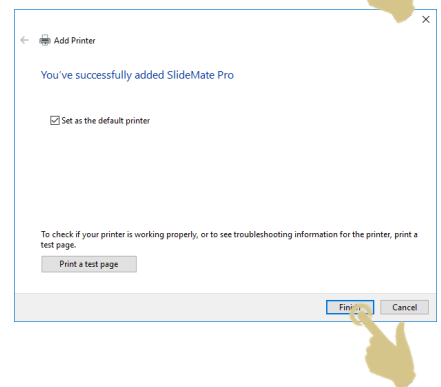
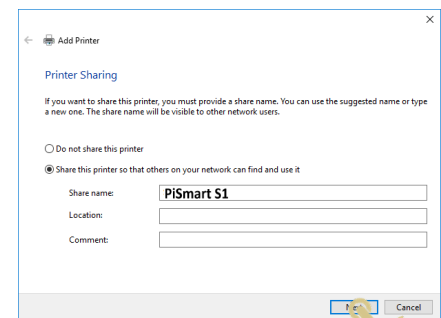
- If required, modify the printer name
- Press Next



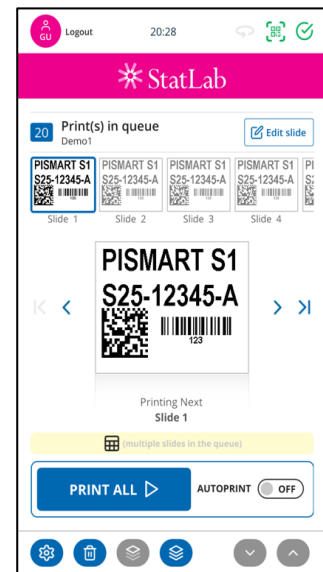
- Modify as necessary and press Next

Test the printer by pressing the Print a Test Page button.

- Press Finish when complete



You should see a print job appear on the front of the printer and the trash bin should appear. If this test print does not appear, power cycle the printer and try sending the test print again.



A slide printer is shown in this example

The printer is now set up and can be used to print using many external software programs. You will see the printer shown in the Devices and Printers menu.

Label images will be sent to the printer just as they would using a standard windows printer and can be sent from any number of applications at the same time. Pages must be formatted to 1 inch wide by 1 inch tall with 0.0-inch margins set for Slide Printers and 1.2 inch wide by .27 inch tall for cassette printers.

Using a Hot Folder

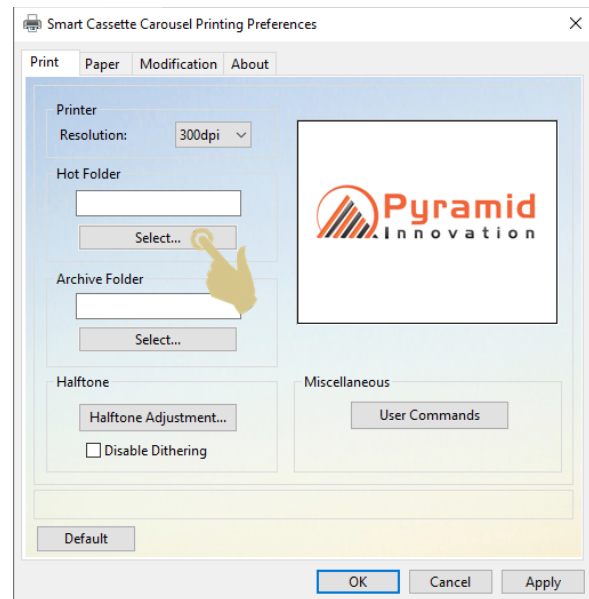
A Hot Folder, also known as a Cache Folder is used to send delimited text files to the printer. When this method is used, the printer must be set up to accept the files and configure the label. This is done using the printer's internal label design software.

Set up the Hot Folder:

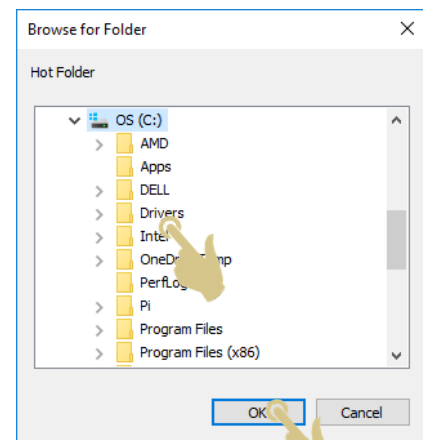
Using an Archive Folder

An Archive folder can be used for troubleshooting or for advanced printing function. When set, the driver will copy all files from the hot folder to this folder prior to sending the text files to the printer.

- Create a folder on the PC or Network where the delimited text files will be transferred to for printing.
- Open the Printer Printing Preferences menu
- Press Select



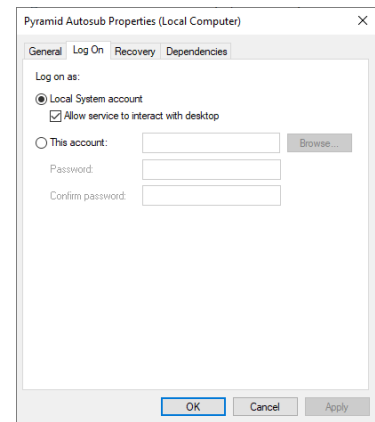
- The Windows Browse window should appear, set the correct path to the folder that will be used to transfer files.
- Press OK
- The Hot folder is now set.



NOTE: IF THE HOT FOLDER WILL BE LOCATED ON THE SERVER/NETWORK, THE FOLLOWING DIRECTIONS WILL BE CRITICAL.

- Path entries for networks should be in the form of <servername>folder e.g. \\Pyramid-PC\Users\Bill\Desktop\HotFolder
- The marked folder should also have full rights so adding a user 'everyone' under Properties->Security for that folder and assigning all access is required
- To determine what mapping has been used for assigned drives open a cmd prompt and use 'net use' to obtain the path
- The service will need to be configured so that it is permitted to open the server location.

- Go to services
- Right click on Pyramidautosub and select open services
- Right click on Pyramidautosub and select Properties
- Click Log On and select this account
- Enter proper account and passwords
- You must also select the locations you are allowing the service to access.



Setting up multiple printers Hot Folders

Each Windows printer can be set up with a unique Hot Folder. The path must be set for each printer and each printer must use a different hot folder.

To Modify the Size of the Imported Label

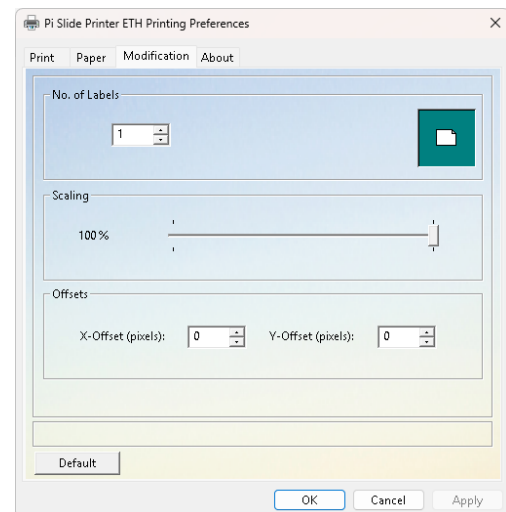
SCALING

TO MODIFY THE SIZE OF THE INCOMING LABEL, SLIDE THE BAR LEFT OR RIGHT.

IN SOME PRINTING PROGRAMS, YOU MAY NEED TO SET THIS IN PRINTING PREFERENCES WITHIN THE APPLICATION.

Offsets

THIS SETTING ENABLES THE MOVEMENT OF THE PRINT ARE UP, DOWN, LEFT AND RIGHT



Print using Delimited Text Files

The driver can be used to send delimited text format files to the slide printer. These files will require a translator and template be set up on the slide printer. The slide printer will, as the file is received, strip out all of the formatting characters and deliver the sample data for printing to the template. These files will look similar to the example below.

S19,12345,A,1

The Hot Folder within the windows driver will also need to be set. This folder is the location text files will be placed as slides are ordered to be printed. Sometimes this is also referred to as a Cache folder.

Print Using Other Printer Drivers

Print using Zebra Format Files

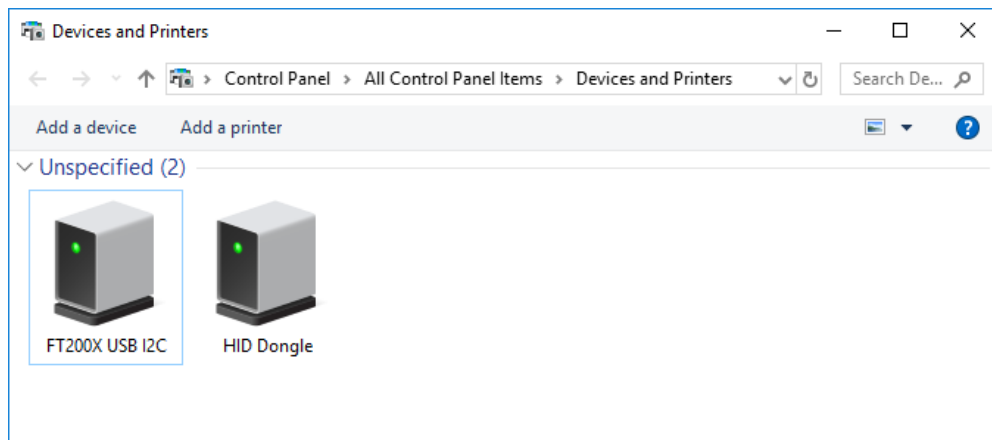
The Pyramid Innovation printers can print using Zebra (ZPL) files. A Generic Text Only Printer will need to be set up in Printers on the PC or Server. Zebra format text files can be sent to the printer. This type of file will require a translator and template be set up on the printer. The printer software will, as the file is received, strip out all formatting characters and deliver the specimen ID data for printing to the template. These files will look similar to the example below.

```
^XA
^LH0,0
^F010,15^A0N,25,20^FD15-SSP999977 ^FS
^F010,35^A0N,20,20^FDTESTSAM, T ^FS
^F010,60^A0N,20,20^FDA1-1 ^FS
^F010,75^A0N,20,20^FD ^FS
^F010,85^A0N,20,20^FDDMSKN ^FS
^F010,110^A0N,20,20^FDH&E ^FS
^F002,135^BY1,3.5,40^BCN,25,N,N^FDSSP15999977^FS
^F010,165^A0N,20,20^FDURMC LABS ^FS
^XZ
```

Troubleshooting

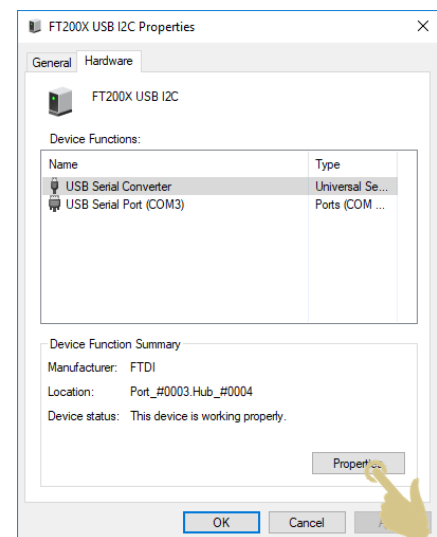
USB port not identified correctly as a com port

IF THE USB CABLE FROM THE PRINTER IS PLUGGED INTO THE PRINTER AND THE PC AND THE CONNECTION DOES NOT SHOW UP AS A COM PORT, CHECK THAT THE LOAD VCP IS CHECKED.

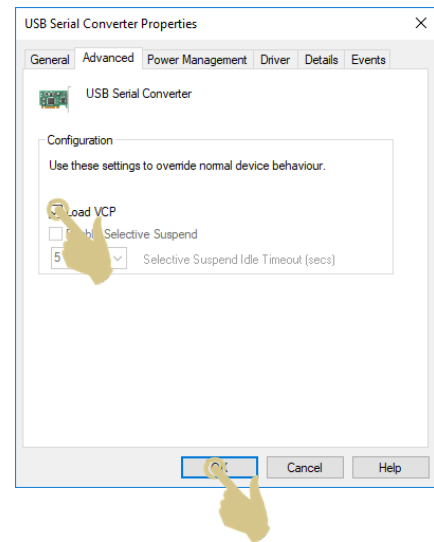


OPEN THE DEVICES AND PRINTERS MENU AND LOOK FOR THE ITEM LABELLED FT200X USB I2C AND RIGHT CLICK ON THIS DEVICE AND SELECT PROPERTIES.

From the properties menu, select the Properties box.



- PRESS THE LOAD VCP (VIRTUAL COM PORT) BOX AND PRESS OK.
- PRESS APPLY AND OK AND CLOSE REMAINING WINDOWS. YOU SHOULD NOW SEE THE PORT LISTED UNDER PORTS, COM AND LPT IN DEVICE MANAGER.



Updating the Driver

PLEASE FOLLOW THESE STEPS TO UPDATE THE DRIVER:

- STOP THE PYRAMID AUTOSUB SERVICE RUNNING VIA THE SERVICES TAB IN TASK MANAGER
- DELETE THE PYR_AUTOSUB.EXE FROM THE \WINDOWS\SYSTEM32\POOL\DRIVERS\X64\3 FOLDER
- REMOVE ANY PYRAMID INNOVATION WINDOWS PRINTERS IN SETTINGS
- UNINSTALL THE PYRAMID INNOVATION PRINTER DRIVERS USING ADD AND REMOVE PROGRAMS
- RESTART WINDOWS BEFORE RUNNING THE SETUP.EXE
- INSTALL THE NEW DRIVER